REMARKS

Claims 1-20 have been rejected in the present office action. In response, Applicants have amended Claim 20 and added Claim 21. Additionally, applicants have amended Claims 18 and 19 to correct a typographical error. Applicants have added Claims 22 and 23. Support for that amendment can be found in the specification as originally filed on page 17, line 13.

Rejection - 35 USC 112

The examiner has rejected Claim 20 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In response, applicants have amended Claim 20 to make claim 20 a dependent claim. Additionally, applicants have added Claim 21. Support for these amendments can be found in the specification on page 6, beginning on line 1.

Rejection – 35 USC 102

The examiner has rejected Claims 18-20 under 35 USC §103(b) as being anticipated by Dejneka et al (US 6,589.895). The examiner states that Dejneka discloses glass compositions that cover each and every claims limitation of Claims 18-20. He recites Samples CA, CB, CC and CD, in Table II, col. 7; samples DS, DT and DU from Table Vi, col. 8; Samples ID, IF-IM, from table VI, col. 9; samples Kx-LF, (all compositions in table VII, col. 10); samples HW-JM (all compositions in table VIII, col 9-10); and Samples OR, OS and OT from table IX in Col.11.

Applicants respectfully disagree. The composition disclosed in the present application is different from the one disclosed by Dejneka. All the glasses disclosed by Dejneka contain Thulium compound (Tm_2O_3). The thulium compound of Dejneka makes the glass unsuitable for the uses discussed in the present invention, therefore the glass compositions disclosed by in the present application are free from Tm_2O_3. Even the small quantities (0.001 mole%) of Tm_2O_3, as disclosed by Dejneka, will have a strong absorption in the 0.3-2.0 μm wavelength range. Also, in most of the compositions disclosed by Dejneka in various tables of

his patent, there are other components such as K_2O, Al_2O_3, CaO, and CeO_2 which are not part of glass of the present invention. Lighter components such as CaO and Al_2O_3 shift the infrared cutoff wavelength to shorter wavelength reducing the IR transmission near 5 μm wavelength. These properties make the glasses disclosed by Dejneka completely different from the glasses of the present invention, as the glasses of Dejneka are inoperable for the vis-IR applications, such as the windows and dome applications, discussed in the present invention. In support of this statement, applicants have submitted a Declaration under 37 CFR 1.132 of Shyam S. Bayya.

Additionally, the examiner stated that Dejneka "fails to disclose that any hydroxyl groups are present in the glass compositions. Moreover, the reference discloses that the halogen compounds strip out the OH groups during melting. For these reasons, the claim 18 recitation regarding hydroxyl group concentration is assumed to be *inherent* to the reference. Applicants respectfully disagree. The hydroxyl group concentration is not inherent to the reference.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)

Dejeneka discloses that "chloride/fluoride to help remove *most* of the OH as HCl and HF at high temperatures after melt. Dejeneka implicitly implies that OH remains even after treatment with HCl and HF. (col. 6, lines 24). Additionally, Dejeneka states that "This combination of processing and composition *reduces* the beta OH of the glass by a factor of 50 over conventional melting techniques." (Col. 6, lines 29-31). Thus Dejeneka states that OH remains in his composition, whereas the present invention teaches and claims "a BGG glass material having

less than 1 part per million hydroxyl ions" (claim 18) and is "devoid of water" (p. 4, line 19), which significantly differs from the teachings of Dejeneka. Fig. 4 of Dejenka shows a concentration of beta OH greater than 0.001, although it is not clear from the reference exactly what the 0.001 is a measure of. Therefore, the claim 18 recitation regarding hydroxyl group concentration is not inherent to the reference. In support of this statement, applicants have submitted a Declaration under 37 CFR 1.132 of Shyam S. Bayya.

Rejection – 35 USC 103

The examiner has rejected Claim 1 under 35 USC 103(a) as being unpatentable over Dejneka in view of Jewel (US 5.486,495). The examiner states "as noted above, Dejneka discloses a glass composition that anticipate the glass recited in Claims 18-20. These glasses also anticipate the compositional recitation of instant Claims 3, 7, 9-12. Dejeneka et al provides little guidance on the method of making the glass. However, it is well known in the art, glasses are formed by melting, quenching, annealing and cooling. For example, Jewell et al disclose a method of making a BGG glass ceramic in which raw materials containing sources Ba, Ga, Ge are melted, quenched, annealed at a temperature above the glass transition temperature and cooled. See col. 4, lines 4-28. Therefore it would have been obvious to one skilled in the art to have formed the glass of Dejneka in the manner taught by Jewel because it is well known that glasses are formed in a manner akin to Jewel et al.".

Applicants respectfully disagree. To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As discussed above, Dejneka neither teaches nor discloses the glass of Claims 18-20. Therefore, the references do not teach or suggest all the claim limitations. Therefore, applicants respectfully submit that the rejection has been overcome and request reconsideration.

Rejection – 35 USC 103

The examiner has rejected Claims 2 –17 under 35 USC 103(a) as being unpatentable over Dejneka in view of Jewel as applied to Claim 1 above, and further in view of Higby, et al (US 5,305,414). The examiner states that "the combination of Dejneka and Jewell is silent on fining. Higby et al discloses that a vacuum may be applied to BGG glass at its melting temperature to remove dissolved gasses. See the paragraph bridging cols. 4 and 5 of Higby, et al. This process is also called 'fining'. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied a vacuum to the glass of Dejneka during the melting according to the process of Jewell et al as suggested by Higby et al because the resultant glass would have dissolved gasses removed."

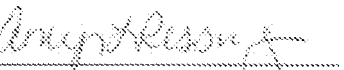
Applicants respectfully disagree. To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As discussed above, Dejneka neither teaches nor discloses the glass of Claims 18-20. Therefore, the references do not teach or suggest all the claim limitations. Therefore, applicants respectfully submit that the rejection has been overcome and request reconsideration.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: 19 June 2006

Respectfully submitted,

By 

Amy L. Ressing
Registration No.: 45,814
US NAVAL RESEARCH LABORATORY
4555 Overlook Ave, SW
Washington, DC 20375
(202) 404-1558
(202) 404-7380 (Fax)
Attorney For Applicant